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Patent
Atty dkt: 839-377

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application

Mark A. Runkle et al.

Group Art Unit: Unknown

Serial No.: 08/550,941

Examiner: Unknown

RECEIVED

MAR 04 1996

Filed: October 31, 1995

GROUP 2100

For: INTERCONNECTION SYSTEM FOR TRANSMITTING POWER BETWEEN
ELECTRICAL SYSTEMS

INFORMATION DISCLOSURE STATEMENT

Honorable Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

In accordance with the provisions of 37 C.F.R. 1.56 and
37 C.F.R. 1.97, the following references are called to the
attention of the Examiner:

"Rotary Converters", Westinghouse Electric &
Manufacturing Company, Circular No. 1028, April 1903, provides a
basic tutorial regarding rotary converters.

"Inductrol Voltage Regulators", General Electric
Company, Publication 607C, pages 29 - 30, shows a one pole
version of a phase shifting transformer.

US Patent 4,503,377 to Kitabayashi et al. discloses a
variable speed rotary electric machine wherein a first stator
winding is connected to an AC power supply of constant frequency
while a second stator winding is connected to a power supply of
variable frequency, with the frequency of the current flowing
through one of the stator windings being controlled by
correspondingly controlling the frequency of the current flowing
through the other stator winding in dependence upon the revolving
speed.

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In Goto et al., "Power System Stabilizing Control By Adjustable Speed Pumped Storage Power Station Using Stabilizing Signals", CIGRE Symposium Tokyo 1995, the main hydro generator is modified to apply a variable-frequency current to the field winding via a cycloconverter-type of excitation system.

United States Patent 4,743,827 to Shiozaki et al. discloses a variable speed hydro turbine wherein control is accomplished using power and speed measurements of the main hydro generator in a closed loop configuration. Closed loop operation presents e.g., dynamic stability concerns (at least in a short time frame after a request for power change).

The literature describes a differential "Selsyn"-type drive utilized for speed control of motors. See Puchstein, Llody, and Conrad, Alternating-Current Machines, 3rd Edition, John Wiley & Sons, Inc., New York, pp. 425 - 428, particularly Fig. 275 on page 428, and Kron, Equivalent Circuits of Electric Machinery, John Wiley & Sons, Inc., New York, pp. 150 - 163, particularly Fig. 9.5a on page 156. The literature cites the differential Selsyn drive only in the context of speed control of motors, i.e., motor speed control via relative speed adjustment between a motor and generator. Moreover, the differential Selsyn drive has a low bandwidth and makes no effort to dampen rotor oscillations.

Larsen, Einar V., et al, "Specification of AC Filters For HVDC Systems" 1989, describes the challenges of coordination ac filters and reactive compensation in a typical HVDC installation.

Although the relevance of the listed documents is briefly described for the purpose of aiding the Examiner, the Applicants do not thereby intend to limit the Examiner's consideration of these documents. Rather, the Examiner is invited to examine all portions of these documents in detail.

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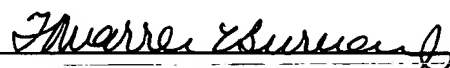
For the Examiner's convenience, a copy of each listed document is enclosed.

Form PTO 1449 is attached.

Respectfully submitted,

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By:



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